

REMARKS/ARGUMENTS

Applicant respectfully requests reconsideration of this application, as amended, and reconsideration of the Office Action dated September 29, 2009. Upon entry of this Amendment, Claims 1-7, 10-12, 14-19, 23-27, and 40-41 will be pending in this application. Claims 8-9, 13, 20-22, and 28-39 have been previously canceled. Claims 1 and 40 are the independent claims.

Support for the amendment to Claim 5 is found in the specification at page 5, second full paragraph.

The Examiner has rejected Claim 5 under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. Claim 5 has been amended to make clear that the permeability is about $0 \text{ cm}^3 \text{ m}^{-2} \text{ day}^{-1}$.

The Examiner has rejected Claims 40-41 under 35 U.S.C. §102(b) as anticipated by King United States Patent No. 3,821,135.

In order to sustain a rejection based on anticipation, the prior art King reference must provide an enabling disclosure of each of the claim elements in the claimed combination. Because the King reference does not disclose the use of a reactive hot melt polyurethane adhesive for coating a cork stopper, the King reference does not anticipate Claims 40-41. In fact, the King reference is no different than the previous prior art references which failed to disclose a reactive hot melt polyurethane adhesive for coating a cork stopper. Because the Examiner has abandoned her reliance on the previous prior art references that disclosed adhesives other than a reactive hot melt polyurethane adhesive, such non-reliance on the previously cited prior art

references represents a tacit acceptance of applicant's previous argument that a reactive hot melt polyurethane adhesives can be clearly differentiated from other adhesives. Applicant's reference back to the previously cited prior art references, and the arguments previously made by the applicant, is important because by citing the King reference, the Examiner is again relying on a reference, which while using a polyurethane adhesive, does not use a reactive hot melt polyurethane adhesive. Consequently, applicant's comments previously made and the evidence we previously lodged explaining the difference between a reactive hot melt polyurethane adhesive and other kinds of polyurethane adhesives, apply to the King reference as well.

Claim 40 requires a number of features which are not disclosed in the King reference, but perhaps the most pertinent, is the requirement in Claim 40 that a sub-layer of a reactive hot melt polyurethane adhesive is applied to the cork stopper. King does not teach or even suggest that a reactive hot melt polyurethane adhesive could or should be used. In contrast, the adhesives disclosed in King are two part polyurethane resin adhesives or simple polyurethane resins. While two part polyurethane adhesives are "reactive", they are not reactive hot melt polyurethanes. In this connection, applicant directs the Examiner's attention to the web page, <http://www.hbfuller.com/adhesives/technologies/reactive/000509.shtml>, on the H B Fuller website (copy attached). This web page explains in clear terms the difference between reactive hot melt adhesives and two-part polyurethanes.

From the explanations in the H B Fuller web page, it is clear that the adhesive disclosed and claimed in the King reference namely, a "liquid mixture of an organic polyisocyanate and an active hydrogen containing organic compound, with said mixture being reactable to form a polyurethane elastomeric resin" (Claim 1), is a two part polyurethane and not a reactive hot melt polyurethane. In particular, reactive hot melt polyurethanes are one part adhesives that are applied as a liquid melt that cools to become a solid at room temperature and that then subsequently reacts in the presence of moisture to become a thermosetting polymer.

In contrast, the polyurethane described in the King reference is a two part adhesive that needs to be mixed and not a one part adhesive. Secondly the adhesive disclosed in the King reference is a liquid whereas reactive hot melt polyurethanes are solids until melted. Finally, the adhesive of the King reference is mixed with water so that the King adhesive can be mixed with the cork powder and can penetrate the cork particles to form the composite described in the King reference. By contrast, reactive hot melt polyurethanes do not mix with water. Not only is the reactive hot melt polyurethane adhesive immiscible to water, the reactive hot melt polyurethane adhesive reacts with water and as such would be unusable in forming the molded items disclosed in the King reference.

Other adhesives are mentioned in the disclosure of the King reference but each adhesive is a two part system that forms a polyurethane resin adhesive and not a reactive hot melt polyurethane adhesive. Further, a reactive hot melt polyurethane adhesive would be completely

unsuitable for the purpose described in King. As discussed above, reactive hot melt polyurethanes are solids which require heating to become fluid. This generally requires the reactive hot melt polyurethane adhesive to be heated to between 85°C and 140°C. The fluid that is produced is viscous (generally 2000 to 80000 cps), and requires specialized machinery to keep the reactive hot melt polyurethane adhesive hot, to keep the reactive hot melt polyurethane adhesive fluid, to keep the reactive hot melt polyurethane adhesive away from moisture, and to pump the reactive hot melt polyurethane adhesive to the site for use.

It is essential that no moisture comes into contact with the reactive hot melt polyurethane adhesive after it has melted and before it is used because moisture causes the polyurethane components to react and cure. Once curing occurs, the polyurethane becomes a solid which cannot be re-melted at normal temperatures and can no longer be used as an adhesive.

If an attempt were made to mix molten reactive hot melt polyurethane adhesive with water, as required by the King reference, the reactive hot melt polyurethane adhesive would cool immediately and cure, and the cured reactive hot melt polyurethane adhesive would be impossible to mix with the cork particles. Further, because the reactive hot melt polyurethane adhesive would cure rapidly in the presence of water, the reactive hot melt polyurethane adhesive would cease to be a usable as an adhesive, and when the cork particles were put into the mold they would not bond together. Moreover the polyurethane could not be re-melted subsequently, for example, to bond a film to the insole as described in the King reference.

Moreover, the methods and molded articles described in the King reference could not use a reactive hot melt polyurethane adhesive because a reactive hot melt polyurethane adhesive does not penetrate cork, rather it bonds to the surface. The end result would not be a free flowing cork powder that the King reference describes. See column 2, lines 15 to 24. Instead, what would be achieved by using a reactive hot melt polyurethane adhesive in the context the King reference would be a sticky toffee-like substance that would stick to the inside of the mold and that, once cooled, would be impossible to extract without damaging or destroying the molded product. In fact, a reactive hot melt polyurethane adhesive is designed to bond material, such as metal used for making molds and therefore would be completely unsuitable for the methods and molded articles described in the King reference.

Applicant also submits that none of the molded articles listed in the King reference is a stopper, and there is no mention anywhere about the products being inserted in a receptacle to close the receptacle's opening. Moreover, the seal identified in the King reference is not equivalent to a stopper. In this connection, the Examiner suggests that the articles disclosed in the King reference are able to be "inserted into a receptacle to close an opening in the receptacle," citing column 6, lines 4 to 15 of the King reference. These lines, however, read:

The impregnated cork particles of this invention can be moulded into many useful articles employing simple molding techniques. Typical molded articles include shoe innersoles, shoe outsoles, brassiere cups, acoustic panelling, stair treads, automobile headliners, automobile dash and/or crash panels, gaskets and seals, wall panelling carpet underlay,

floor tile, seat cushions, cold and hot temperature insulation panels, filters, liquid flotation equipment (life jackets, fishing bobs, etc) and the like.

Thus the Examiner's quote is not from this passage, and indeed, applicant has not been unable to locate the passage quoted by the Examiner in the entire specification of the King reference.

Applicant further suggests that in the King reference the term "seal" should be construed as sui generis with "gasket," and as such, would not be construed by a person of ordinary skill in the art as a stopper. Having said that, applicant acknowledges that stoppers made by agglomerated cork particles are known. Such stoppers, however, suffer from various disadvantages and drawbacks. In particular, such agglomerated cork stoppers are very weak. Indeed, agglomerated cork stoppers benefit from the arrangement claimed in the present invention, which arrangement enables such agglomerated cork stoppers to perform without deteriorating or tainting wine contained in the stoppered bottle.

In the light of the foregoing, applicant submits that the King reference does not disclose an essential feature of Claim 40, and as such, the King reference does not anticipate the subject matter of Claim 40.

The Examiner has rejected Claims 1-7, 10-11, 17, and 24-27 under 35 U.S.C. §103(a) as unpatentable over the King reference.

The Examiner has also suggested that Claim 1 is obvious over the disclosure in the King reference. For all of the reasons discussed above, however, the subject matter of Claim 1 is not obvious in view of the King reference. Indeed, the King reference does not give any suggestion

that the reactive hot melt polyurethane adhesive of the present invention could be used in the molding process disclosed in the King reference or suggest that particular benefits could be achieved by using the reactive hot melt polyurethane adhesive in the molding process disclosed in the King reference. In fact, the King reference teaches away from the present invention by using a completely different form of polyurethane for which the reactive hot melt polyurethane adhesive of the present invention could not be substituted and would be totally unsuitable.

The Examiner has acknowledged that the specific thickness claimed in Claim 1 is not disclosed in the King reference but has suggested that a person of ordinary skill in the art would have been motivated to utilize routine experimentation to determine the desired thickness and resulting oxygen permeability. Nothing in about King reference, however, supplies that motivation. Further the thickness is not an arbitrary one. Indeed, the specified thickness is essential to ensure a workable bond that will withstand the rigors of stopper insertion into a bottle and provide the required protection.

The Examiner also suggests that other layers can be applied to the agglomerated cork body disclosed in the King reference by using heat to soften the polyurethane to secure the protective layer. As discussed in detail above, the polyurethane adhesives used in the King reference would not allow the arrangement of the present invention to be used. Further, with the process described in the King reference, there would be no way to ensure that there would be sufficient polyurethane available from the cork particles to achieve either a thick enough layer of

adhesive to bond the film to the cork effectively nor that the adhesive layer would be continuous across the surface of the cork.

The Examiner also suggests that another adhesive could be used to bond a film to the stopper. The King reference does not disclose anything that would teach a person of ordinary skill in the art that the arrangement now claimed in Claim 1 could or should be used nor that such an arrangement would have the substantial benefits as detailed in the application as filed and in applicant's response to the previous office action.

Because the subject matter of independent Claim 1 is not obvious in view of the King reference for the reasons outlined above, dependent Claims 2-7, 10-11, 17, and 24-27 are likewise not obvious in view of the King reference.

The Examiner has rejected Claims 12, 14-16, 18, and 19 under 35 U.S.C. §103(a) as unpatentable over the King reference in view of the admitted prior art, or Conrad United States Patent No. 6,152,966 or JP 05-031831 or WO 00/64647 or WO 00/64649, or WO 96/28378.

Because the subject matter of independent Claim 1 is not obvious in view the of the King reference, dependent Claims 12, 14-16, 18, and 19 are likewise not obvious over the King reference in view of the admitted prior art, or Conrad United States Patent No. 6,152,966 or JP 05-031831 or WO 00/64647 or WO 00/64649, or WO 96/28378.

If any additional fees are due in connection with the filing of this Amendment or the accompanying papers, such as fees under 37 C.F.R. §§1.16 or 1.17, please charge the fees to SGR Deposit Account No. 02-4300, Order No. 045637.005. If an additional extension of time under 37 C.F.R. §1.136 is necessary that is not accounted for in the papers filed herewith, such an extension is requested. The additional extension fee also should be charged to SGR Deposit Account No. 02-4300, Order No. 045637.005. Any overpayment can be credited to Deposit Account No. 02-4300, Order No. 045637.005.

Respectfully submitted,

SMITH, GAMBRELL & RUSSELL, LLP

By: *Dale Lischer*
Dale Lischer, Reg. No. 28,438

Date: *December 29, 2009*
Suite 3100, Promenade II
1230 Peachtree Street, N.E.
Atlanta, Georgia 30309-3592
Telephone: (404): 815 3741
Facsimile: (404): 685-7041